

REMARKS

Claims 1-10, 12-20, 22, 24, 25 and 27-36 are now pending in the application. Claims 1-10, 12-14, 17-19, 22, 24, 25, 28 and 29 have been amended herein. Claims 11, 21, 23, and 26 have been cancelled herein. Claims 30-33 stand withdrawn. Claims 34-36 have been added herein. Various paragraphs of the specification have been amended herein to correct obvious errors. No new matter has been added herein. Support for the Amendments to claims 1, 10, 22 and 29 can be found at least on page 12, third paragraph and in Figures 1, 8, 17 and 18 in which a unit block is disposed in pixels variously. Additional support for the Amendment to claim 22 can also be found on page 23, lines 14-20 and in Figures 2 and 3. The Examiner is respectfully requested to reconsider and withdraw the rejections in view of the amendments and remarks contained herein.

SPECIFICATION

The specification stands objected to for certain informalities. The last paragraph on page 21 that extends onto page 22 has been amended herein to recite the correct reference numeral following "scanning line" as suggested by the Examiner. Therefore, it is believed the objection is now moot and withdrawal of the instant objection is respectfully requested.

REJECTION UNDER 35 U.S.C. § 102

Claims 1-3, 6, 9-16, 20, and 22-29 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Smith et al. (U.S. Pat. No. 5,545,291. This rejection is respectfully traversed.

Referring to claim 1, the claim calls for "disposing each unit block on a second base board such that each unit block corresponds to the pixel or the plurality of pixels formed thereon." Claim 10 calls for "disposing each unit block on the second base board such that each unit block corresponds to the pixel or the plurality of pixels formed on the base board." Claim 17 calls for "disposing each unit block on a base board such that each unit block corresponds to the pixel or the plurality of pixels formed on the base board." Claim 18 calls for "disposing each unit block on a base board such that each unit block corresponds to the pixel or the plurality of pixels formed on the base board." Claim 29 calls for "disposing each unit block, which is formed on the first base board, on a second base board such that each unit block corresponds to the pixel of the plurality of pixels formed thereon." It is respectfully submitted that the Smith et al. reference does not disclose or suggest the subject matter of claims 1, 10, 17, 18 and 29.

Rather, the Smith et al. reference discloses and teaches methods that include transferring shaped blocks via a fluid onto a top surface of a substrate having recessed regions or generally binding sites or receptors. See column 3, lines 9-12 of the Smith et al. reference. To this end, the Smith et al. reference discloses and teaches the forming of gallium arsenide blocks that are transferred to recessed regions in a substrate. The substrates disclosed and taught in the Smith et al. reference appear to be homogeneous substrates that do not contain any type of elements much less a pixel or

a plurality of pixels on which the unit block is disposed. The transferring of the blocks into complementary shaped recessed regions in a substrate is not the same as disposing each unit block on a base board such that each unit block corresponds to the pixel or the plurality of pixels as called for in claims 1, 10, 17, 18 and 29. Accordingly, it is respectfully submitted that the subject matter of claims 1, 10, 17, 18 and 29 are not anticipated nor rendered obvious by the Smith et al. reference. Claims 3-9 all depend from claim 1 and, therefore, for at least the reasons stated above with reference to claim 1 are also not anticipated nor rendered obvious by the Smith et al. reference. Claims 12-16, 34 and 36 all depend from claim 10 and, therefore, for at least the reasons stated above with reference to claim 10 are also not anticipated nor rendered obvious by the Smith et al. reference.

Referring now to claim 2, the claim calls for "disposing a plurality of unit blocks having said semiconductor element on a first base board, which is composed of a single crystalline semi-conductor; dicing the first base board so as to be divided per unit block." Similarly, claim 28 calls for "said semiconductor element is detached from the base board by dicing so as to be divided per unit blocks." In contrast, the Smith et al. reference teaches the forming of blocks 19 on a substrate 10 that are then removed from the substrate 10 by a lift-off technique. See column 6, lines 15-18 of the Smith et al. reference. The use of a lift-off technique is not the same as dicing as called for in claims 2 and 28. Accordingly, it is respectfully submitted that the subject matter of claims 2 and 28 are not anticipated nor rendered obvious by the Smith et al. reference.

Referring now to claim 6, the claim calls for "the unit block being introduced to a disposed at a predetermined position of the first base board by Coulomb attractive force." Similarly, claim 20 calls for "the unit block is introduced at a predetermined position on the base board by Coulomb attractive force." It is respectfully submitted that the subject matter claims 6 and 20 are not disclosed or taught by the Smith et al. reference. Rather, the Smith et al reference teaches the transferring of the blocks into a solution forming a slurry and spreading the slurry evenly over the top surface of a silicon substrate having recessed regions. See at least column 5, lines 5-8 of the Smith et al reference. The transferring and positioning of the blocks by spreading a slurry is not the same as the use of Coulomb attractive force as called for in claims 6 and 20. Accordingly, it is respectfully submitted that for at least this reason the subject matter of claims 6 and 20 are not anticipated nor rendered obvious by the Smith et al. reference.

Referring now to claim 10, the claim calls for "disposing a plurality of unit blocks having said semiconductor element and first connecting terminals which are connected to the semiconductor element on a first base board; disposing wirings and second connecting terminals above a second base board; and disposing each unit block on the second base board such that . . . the first connecting terminals which are disposed on the unit block are connected with the second connecting terminals which are disposed on the second base board." Similarly, claim 22 calls for "disposing a plurality of unit blocks having said semiconductor element and first connecting terminals which are connected to the semiconductor element on a first base board; disposing wirings and second connecting terminals above a second baseboard; disposing each unit block on the second baseboard . . . so as to connect the first connecting terminals which are

disposed on the unit block with the second connecting terminals which are disposed on the second base board.” It is respectfully submitted that the Smith et al. reference does not disclose, teach nor suggest the subject matter of claims 10 and 22.

Rather, the Smith et al. reference, as stated above, discloses forming gallium arsenide blocks that are transferred into a slurry and spread over the top surface of a substrate having recessed regions therein in which the blocks are positioned. The Smith et al. reference is silent about any type of second base board much less disposing wirings and second connecting terminals above a second base board and disposing each unit block on the second base board with the first connecting terminals connected with the second connecting terminals as called for in claims 10 and 22. For at least these reasons, it is respectfully submitted that the Smith et al. reference does not anticipate nor render obvious the subject matter of claims 10 and 22. Claims 12-16, 34 and 36 all depend from claim 10 and, therefore, for at least the reasons stated above with reference to claim 10 are also not anticipated nor rendered obvious by the Smith et al. reference.

Referring now to claims 12, 13, 14, 17 and 18, each of these claims call for “the unit block having plural semiconductor elements for driving plural neighboring organic EL elements.” It is respectfully submitted that the subject matter of claims 12, 13, 14, 17 and 18 is not anticipated nor rendered obvious by the Smith et al. reference. Specifically, the Smith et al. reference discloses a block 19 but is silent about block 19 being used to drive any neighboring components much less the block 19 having plural semiconductor elements for driving plural neighboring organic EL elements as called for in claims 12, 13, 14, 17 and 18. Thus, with the Smith et al. reference being silent about

the block being used to drive plural neighboring organic EL elements, it is respectfully submitted that claims 12, 13, 14, 17 and 18 are not anticipated nor rendered obvious by the Smith et al. reference. Claim 15 depends from claim 12 and, therefore, for at least the reasons stated above with reference to claim 12 is also not anticipated nor rendered obvious by the Smith et al. reference. Claim 16 depends from claim 14 and, therefore, for at least the reasons stated above with reference to claim 14 is also not anticipated nor rendered obvious by the Smith et al. reference.

Claim 12 also calls for "a planar shape of the unit block is polygonal and the first connecting terminals are rotationally symmetrically centered at a center of the polygon, and a number of corners of the polygon corresponds to a number of semiconductors formed on the unit block." In contrast, the Smith et al. reference discloses polygonal blocks 19 having a shape that corresponds to the cavities within which the blocks are to be deposited. However, the Smith et al. reference is silent about semiconductor elements being on the unit block much less the number of corners of the polygon corresponding to the number of semiconductors formed on the unit block as called for in claim 12. Thus, for at least this additional reason, it is respectfully submitted that the subject matter of claim 12 is not anticipated nor rendered obvious by the Smith et al. reference.

Referring now to claims 13 and 24, both claims call for "a planar shape of the unit blocks/block being rectangular, the first connecting terminals are disposed so as to be axis symmetric with respect to center lines which are parallel with a longer side of the rectangle or a short side of the rectangle." In contrast, the Smith et al. reference discloses ring contacts 207, 135 that are positioned on block 19, as shown in Figures 9

and 11 of the Smith et al. reference. The contact being ring shaped would be symmetrical. However, a symmetrical ring contact is not the same as the first connecting terminals being disposed so as to be axis symmetric with respect to center lines which are parallel with a longer side of the rectangle or a shorter side of the rectangle as called for in claims 13 and 24. Accordingly, it is respectfully submitted that the subject matter of claims 13 and 24 is not anticipated nor rendered obvious by the Smith et al. reference.

Referring now to claims 14 and 25, both claims call for "a planar shape of the unit block is polygonal and the first connecting terminals are disposed along diagonal lines of the polygon." In contrast, as stated above, the Smith et al. reference discloses ring contacts 207, 135 that are located on block 19. The ring contacts 207, 135 of the Smith et al. reference are not the same as the first connecting terminals being disposed along diagonal lines of the polygon as called for in claims 14 and 25. Accordingly, it is respectfully submitted that the subject matter of claims 14 and 25 is not anticipated nor rendered obvious by the Smith et al. reference. Claim 16 depends from claim 14 and, for at least the reasons stated above with reference to claim 14 is also not anticipated nor rendered obvious by the Smith et al. reference. Claim 27 depends from claim 25 and, therefore, for at least the reasons stated above with reference to claim 25 is also not anticipated nor rendered obvious by the Smith et al. reference.

For at least the reasons stated above, it is respectfully submitted that claims 1, 3, 6, 9-16, 20, and 22-29 are not anticipated nor rendered obvious by the Smith et al. reference. Accordingly, withdrawal of the instant rejections are requested.

REJECTION UNDER 35 U.S.C. § 103

Claims 7, 8, 17, 18, and 21 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Smith et al. (U.S. Pat. No. 5,545,291) in view of Jacobsen et al. (U.S. Pat. No. 6,468,638). This rejection is respectfully traversed.

Claims 7 and 8 both depend from claim 1. Claim 1 is patentable for the reasons mentioned above and, therefore, for at least these same reasons, claims 7 and 8 are also patentable over the prior art of record. Accordingly, withdrawal of the instant rejection is requested.

Claims 17 and 18 have been amended to be in independent form. Claim 17 calls for "plural groups of organic EL elements that are made of 3 pieces of neighboring organic EL elements . . . being disposed on the base board, and each of the semiconductor elements for driving 3 pieces of neighboring organic EL elements being disposed at a position which is centered relative to the 3 pieces of neighboring organic EL element per group." Similarly, claim 18 calls for "plural groups of organic EL elements made of 6 pieces of neighboring organic EL elements . . . being disposed on the base board, each unit block having semiconductor elements for driving 6 pieces of neighboring organic EL elements being disposed at a position which is centered relative to the 6 pieces of neighboring organic EL element per group." It is respectfully submitted that the subject matter of claims 17 and 18, as stated above, are not anticipated nor rendered obvious by the Smith et al. reference. Additionally, it is respectfully submitted that the teachings of the Jacobsen et al. reference do not overcome the shortcomings in the Smith et al. reference.

The Jacobsen et al. reference teaches the use of a fluidic self-assembly process to position blocks in a desired location on a substrate or web material. However, the Jacobsen et al. reference does not disclose, teach or suggest the plural groups of organic EL elements made of 3 or 6 pieces of neighboring organic EL elements that are disposed on a base board nor a unit block having semiconductor element for driving 3 or 6 pieces of neighboring organic EL elements being disposed at a position which is centered relative to the 3 or 6 pieces of neighboring organic EL elements per group as called for in claims 17 and 18, respectively. In fact, the Jacobsen et al. reference is silent about the positioning of the blocks relative to a position of any organic EL elements regardless of the number of pieces in each group. Thus, for at least this reason it is respectfully submitted that the subject matter of claims 17 and 18 is not obvious and is patentable over the Smith et al. reference in view of the Jacobsen et al. reference. Accordingly, withdrawal of the instant rejection is respectfully requested.

Claim 21 has been cancelled herein. Accordingly, the instant rejection of claim 21 is now moot.

CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant's representative therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

Dated: Sept 19, 2003

HARNESS, DICKEY & PIERCE, P.L.C.
P.O. Box 828
Bloomfield Hills, Michigan 48303
(248) 641-1600
GGG/BEW/ps

By: 

G. Gregory Schivley
Reg. No. 27,382
Bryant E. Wade
Reg. No. 40,344